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ABSTRACT

Whether there were differences in motivational and learning environment perceptions of students selected based on their performance on the Texas Assessment of Academic Skills (TAAS) was studied over 3 years in a public school district in Texas. The degree to which affective elements of student behavior varied according to their success on this state criterion-referenced tests was investigated with approximately 30 high scoring, 30 middle scoring, and 30 low scoring students in grades 5, 8, and 11. Students completed the Multidimensional Motivation Instrument (MMI) and the Instructional Learning Environment Questionnaire (ILEQ). Differences were found in perceptions of motivation across and within grade levels. Differences were also found in the variance of students' perceptions of motivation according to their performance on the TAAS. Results provided evidence that student motivation is a potential mediating factor for performance. The findings have practical implications that would encourage teachers to be more sensitive to the affective needs of students. The trend in this district for low-performing students to decline in all of the affective dimensions is a problem. (Contains 3 tables and 17 references.) (SLD)

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A Three Year Study of Motivation (MMI) and Learning Environments (ILEQ) as per TAAS Scores of High, Middle, and Low Performing Students

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Abstract

Are there differences in motivational and learning environment perceptions of students who are selected based on their performance on the Texas Assessment of Academic Skills (TAAS)? This question was explored over the past three years in a public school district to determine the degree to which affective elements of student behavior vary according to their success on a state criterion referenced test. The need to understand how various groups of students perceive their learning environments continues to be important (Waxman, Huang, Knight, & Owens, 1993). The past twenty-five years has revealed considerable educational research on the value of examining students' perceptions of the classroom learning environment (Fraser, 1986, 1989; Fraser & Fisher, 1994). This study selected students based on high, middle, and low TAAS scores to determine if there were differences in affect within and across grade levels in the same district.

The need to investigate the classroom and the quality of the learning environment has driven educational research to determine ways of increasing teacher gratification and student performance (Fraser, 1992). Fraser and Fisher (1994) point out that educational research has traditionally focused to a large extent on assessment of academic achievement as they stress the need for a more comprehensive picture of the educational process. Pintrich and DeGroot (1990) add that cognitive engagement in the day-to-day work of the classroom also increases with students motivation and intrinsic value for learning. Moreover, Pintrich and DeGroot suggest that ". . . more ecologically valid classroom research is needed on the multivariate relationships between student academic performance and student motivational orientation and self-regulated learning as well as social cognitive and knowledge factors in different classroom contexts."

The descriptive design of this study allowed a public school district in the Southwest to begin to sort out the relationships between student's academic

performance and their motivational orientation. The theoretical framework of this study focuses on the perceptions of students in determining their motivation and aspirations, therefore the student was selected as the unit of analysis rather than the classroom or school. The student as the unit of analysis is supported by studies such as those by Young and Fraser (1993) that found a major portion of the influence is at the student level. These students completed a composite learning environment instrument that include elements of The Multidimensional Motivation Instrument (Uguroglu, Schiller, & Walberg, 1981; Uguroglu & Walberg, 1986), and the Instructional Learning Environment Questionnaire (Knight & Waxman, 1989, 1990).

The results provide more support that student motivation is a potential mediating factor to performance. These finding have practical implications that would encourage teachers to be sensitive to the affective needs of students. This is to say that teachers need to be made aware of the mediating role of motivation in learning and allow students to be engaged in activities that hold the greatest opportunity for the student to experience success. It appears from the present study that the lack of success may carry a cumulative burden that becomes more than a student can bear by the late elementary and early middle school level. The major limitation to this study is that it does not represent a true longitudinal study, thus limiting the ability to generalize results.

INTRODUCTION

Are there differences in motivational and learning environment perceptions of students who are selected based on their performance on the Texas Assessment of Academic Skills (TAAS)? This question was explored over the past three years in a public school district to determine the degree to which affective elements of student behavior vary according to their success on a state criterion referenced test. The need to understand how various groups of students perceive their learning environments continues to be important (Waxman, Huang, Knight, & Owens, 1993). The past twenty-five years has revealed considerable educational research on the value of examining students' perceptions of the classroom learning environment (Fraser, 1986, 1989; Fraser & Fisher, 1994). This study selected students based on high, middle, and low TAAS scores to determine if there were differences in affect within and across grade levels in the same district.

Fraser and Fisher (1994) point out that educational research has traditionally focused to a large extent on assessment of academic achievement as they stress the need for a more comprehensive picture of the educational process. Pintrich and DeGroot (1990) add that cognitive engagement in the day-to-day work of the classroom also increases with students motivation and intrinsic value for learning. Moreover, Pintrich and DeGroot suggest that ". . . more ecologically valid classroom research is needed on the multivariate relationships between student academic performance and student motivational orientation and self-regulated learning as well as social cognitive and knowledge factors in different classroom contexts."

There are factors other than student ability which affect the degree to which students persist and are able to achieve (Dweck, 1986). Dweck maintains that the social-cognitive approach (versus external contingencies) to studying motivation is more capable to account for student achievement variance. Motivation was found to be significantly associated with constructivist learning environments (Hardwick, 1994) as measured by Constructivist Learning Environment Survey (Taylor & Fraser, 1991). Knight and Waxman (1990) support the need for a better understanding of motivation for insights into short term cognitive gains and longer

term incentive for continued learning in social studies. Knight and Waxman investigate motivation using multidimensional measures so as to more completely define the concept of "self" and its relationship to motivation. Knight and Waxman recommend more studies that peruse the classroom environment and its association with motivation.

Purpose of the Study

The objective of the present study was to examine the motivation and learning environment perceptions of high, middle and low scoring students' as per their performance on the Texas Assessment of Academic Skills test. This study utilizes students' perceptions of motivation when they are grouped according to scores on the Texas Assessment of Academic Skills test to lend insights . Three grade levels (fifth, eighth, and eleventh) are used to see if a point can be determine where a radical shift in motivation is occurring in the public school experience of students. Specifically, fifth, eighth , and eleventh grade students' motivation, as measured by The Multidimensional Motivation Instrument (Uguroglu, Schiller, & Walberg, 1981; Uguroglu & Walberg, 1986) and the Instructional Learning Environment Questionnaire (Knight & Waxman, 1989, 1990) was investigated.

Research Questions

This study will investigate the differences in student motivation across three grade levels depending upon their performance on the Texas Assessment of Academic Skills test. The specific research questions to be addressed include:

1. Are there differences in student perceptions of motivation across grade levels?
2. Are there differences in student perceptions of motivation within grade levels as per their performance on the TAAS test?
3. Are their differences in the variance in students' perceptions within grade levels as per their performance on the TAAS test?

Educational Significance of the Study

This study investigates those psychosocial environments that may be used by teachers to increase achievement. The results from this study may impact

several educational concerns including the degree to which students persist in their efforts to learn and therefore reduce the likelihood of dropping out of school. The potential for the most proximal impact, related to student performance, may be on helping educators understand the need for students to experience sustained success especially as they enter the middle level grades.

REVIEW OF RELATED LITERATURE

Osborne and Wittrock (1983) assert that teachers need to take into account students' perceptions as they (students) enter the classroom. Osborne and Wittrock's "Generative Learning Model" holds that the brain constructs its interpretation of information. The brain is attentive to information that is framed within a prior and meaningful context. Thus, the brain is much more than a "blank slate". "According to the model, to learn with understanding a learner must actively construct meaning." This concept could be significant in consideration of results of this study as students' perceptions of motivation are considered across and within grade levels.

Osborne and Wittrock hold that learning does not begin with experience but with selective attention of the experience that combine long term memory and cognitive processes. As Osborne and Wittrock distinguish between a teaching approach and learning approach they offer that. for students to be motivated. they must be willing to generate meaning, and must realize that their efforts are allowing them to construct sound and useful understanding.

Tobin and Gallagher (1987) found that the primary means of motivation used by teachers in their study was through assessment in the form of independent practice and examinations. Teachers in this study believed that they were limited in their delivery or implementation of the curriculum by either the state or administration. However, when teachers did deviate some from their textbooks they would go to another text for supplemental material. They found teachers more preoccupied with how to present (siphon method) the material than with the form of student engagement.

Duschl and Wright (1989) express concern that the curriculum guides (essential elements) and standardization of an instructional model leaves decisions about teaching outside the teacher. This is referred to as "disenfranchising" the teacher, which can result in "deskilling" the teacher and eroding the teaching profession. Duschl and Wright charge that teachers need to be aware of the premise of genetic epistemology and the development of cognitive skills by the learner. Similar to the work by Osborne and Wittrock above, the manner in which the student (learner) is instructed may impact the motivation of students. The manner in which the delivery of instruction is accomplished may be especially salient as the variance in motivation is examined across grade levels.

The most comprehensive study of the psychosocial dimension of the classroom (related terms include psychosocial environment, classroom climate, class attitudes, etc.) is by Fraser (1989). Fraser synthesizes the classroom climate work over the past 20 years. Fraser predicts that the value and use of classroom environment instruments will be expanded. Fraser's prediction is based not only on the facility of the instruments to explain student outcomes, but also on the availability and variety of forms. Fraser elaborates on the utility of classroom environment instruments for educators from school psychologist to teachers who are increasingly discovering the value of the information to be gleaned from a classroom environment study. Although there are studies that investigate beyond the classroom to consider the larger school climate (Deer, Maxwell, & Relich, 1986), this research effort will focus on the classroom learning environment.

Student perceptions are considered of value because of the intimate relationship that students have with the psychosocial learning environment on a regular basis, which in turn validates their perspective on the variables in question. Student perceptions are used frequently throughout educational research especially in learning environment studies. Student perceptions are used in lieu of independent observers.

The psychosocial dimensions studied in the classroom include a variety of research emphases. Much of the research is focused on the association of the

psychosocial dimension of the classroom with an instructional or curricular mode. Greene (1985) examined perceived control, ability, and effort motivational factors, plus the contributions of incentive value to motivational processes. Greene underscores the significance of her study because of the need to understand the direction of causality between motivation and achievement (i.e.. which came first). Similarly, Fraser (1989) studied the perceptions of students and teachers to determine psychosocial aspects of the classroom learning environment. Fraser pursues several research questions and ultimately discusses ways that teachers can use assessments to facilitate classroom improvements.

Other studies have also examined the impact of the learning environment on the psychosocial environment. Knight and Waxman (1990), in social studies classes, used student perceptions of the learning environment to examine the impact on motivation. Fraser, Giddings, and McRobbie (1991) developed the Science Laboratory Environment Inventory (SLEI) to assess student perceptions of the psychosocial environment in science classes. Specifically, Fraser et al. take a closer look at the impact of science laboratory settings on the cognitive and affective outcomes of student cohesiveness, open-endedness, integration, rule clarity, and material environment.

DATA SOURCES AND METHODS

Fifth, eighth, and eleventh grade students' perceptions of motivation as measured by The Multidimensional Motivation Instrument (MMI) and the Instructional Learning Environment Questionnaire (ILEQ) were determined for approximately 30 high scoring, 30 middle scoring, and 30 low scoring students as per the Texas Assessment of Academic Skills (TAAS) test at each of the three grade levels . The descriptive design of this study examined, by TAAS group with the student as the unit of analysis, differences between the students' perceptions of motivation and classroom learning environments. This study provides for no intervention, rather, students' perceptions of their motivation were used to provide information. A 5-point Likert type scale was used to determine students' perceptions of Social Self-concept, Achievement Motivation, and Academic Self-concept (all three from the MMI), plus Student Aspirations (from the ILEQ).

Traditional descriptive measures of mean and standard deviation were calculated and reported. Analysis of variance (ANOVA) was used to determine significant differences between the high, middle, and low TAAS groups. The .05 alpha level was used to determine significant differences in student perceptions by TAAS group.

Approximately 90 students at each grade level of the fifth, eighth, and eleventh grades respectively were used as the sample for this study. The top 30, the middle 30, and lowest 30 TAAS cumulative (reading, & math) scale scores at each grade level were used in the sample. The fifth grade was the lowest grade level sampled to date because of the reading level limitations of the Multidimensional Motivational Instrument. In each administration of the test, over the three year period, the students were assembled in a central location on the grade level campus to complete the composite questionnaire. The composite questionnaire took approximately 15 minutes for the students to complete.

This public school district is located in the Southwest adjacent to a large metropolitan area and contains both rural and suburban characteristics. The ethnic proportions are approximately 2 % Black, 36 % Hispanic and 62 % White. The district serves between 5000 and 6000 students. Several of the elementary schools have been engaged in homogenous grouping of students. All teachers have at least a bachelors degree and were certified with a mean of 12.5 years of teaching experience. This school district has a higher percentage of students passing the TAAS test than the state average.

RESULTS AND DISCUSSION

The findings in this study reveal several interesting trends. The highest values throughout the study were the perceptions of Student Aspirations for the high TAAS group for the fifth, eighth, and eleventh grades (Tables 1, 2, and 3). The high TAAS group had values of 4.6, 4.85, and 4.75 for grades five, eight, and eleven respectively. Note that the values did not vary considerably throughout the grade levels for the high TAAS group. On the other hand, the low TAAS group had scores of 3.94, 3.44, and 3.74 respectively for the fifth, eighth, and eleventh grades for Student Aspirations. Note that, not only did the Student Aspirations not

reach the magnitude of the high TAAS group, but their perceptions varied more over the three grades investigated than did the high TAAS group. Correspondingly, the middle TAAS group had Student Aspiration perceptions of 4.16, 4.26, and 4.63. The middle TAAS group had Student Aspiration values intermediate to both the low and high TAAS group. The ILEQ scale of Student Aspirations appears to correlate more closely with TAAS performance than any of the MMI scales, although at the time of this paper an appropriate analysis of this correlation has not been completed.

The high TAAS group had Social Self-Concept values of 3.38, 3.86, and 3.68 for the respective grades of five, eight, and eleven. The middle TAAS group had Social Self-concept values of 3.16, 3.08, and 3.62 across the same three grades. The low TAAS group had grade level perception values of 3.39, 2.81, and 3.33 for the three grades. Note the dip in values for the middle and low TAAS group at the eighth grade while the high TAAS group had higher values at the same grade level. Also, the low and middle TAAS group perceptions for Social Self-concept rebound considerably by the eleventh grade. This increase in perceptions in the eleventh grade by the low and middle TAAS group is probably due in large part to mortality of the same profile of student who participated in the study at the eighth grade. This idea of sample mortality is also offered as an explanation for a similar pattern in the other MMI scales.

The high TAAS group had grade level scores of 4.43, 4.49, and 4.35 for Academic Self-concept. The middle TAAS group had fifth, eighth, and eleventh grade scores of 3.84, 4.18, and 4.29 for the Academic Self-concept scale. The low TAAS group had scores of 4.10, 3.34, and 3.90 for the same grades. This scale of Academic Self-concept may, more than any other, represent a dimension of the individual that does not allow for the student to be resilient through the middle grades and experience success, especially for the low TAAS performing student. This dip of .76 (from 4.10 to 3.34) in terms of their Academic Self-concept perceptions represents one of the major areas in need of consideration by this school district for intervention.

The high TAAS group had student perceptions for the Achievement Motivation scale represented by the scores of 4.30, 3.82, and 3.61 for the fifth,

eighth, and eleventh grades. The middle TAAS group had scores of 3.59, 3.46, and 3.68 on the Achievement Motivation scale for the three grades. The low TAAS group had Achievement Motivation scores of 3.81, 3.15, and 3.59 for the same three grade levels. Notice that all three groups had a dip in Achievement Motivation perceptions in the eighth grade. This could reveal the introduction of all students to the concept of more content centered learning environments and the corresponding grade competition.

The analysis of variance results (Tables 1, 2, and 3) reveal that their are significantly higher perceptions for all four scales measured for the high TAAS at the eighth grade level when compared to the middle and low TAAS groups. In addition, all four of the affective scales are lower for the low TAAS group at the eighth grade when compared to their fifth grade perceptions. Note that two out of the four scales are also down for the middle TAAS group in the eighth grade while only one scale (Achievement Motivation) is down at the eight grade for the high TAAS group. In addition, the greatest amount of variance (see standard deviations) of student perceptions of motivation is occurring within the low TAAS group. This greater amount of variance could be problematic if the district is practicing a large degree of homogenous grouping. This homogenous grouping of students could result in a teacher being challenged by the disparity of low affect students within one class.

IMPLICATIONS FOR PRACTICE

The reader should be aware of the limitations of this descriptive study. The spirit of this study was to begin to use learning environment assessments in a manner to improve practice as per Fraser (1989). No cause and effect is being inferred in this study. However, the benefits of this study should also be stressed. The absence of treatment eliminates the possibility that variance observed was introduced as a result of the study. Students completed questionnaires within the atmosphere of their regular campus.

The educational significance of the results of this study takes into consideration the longitudinal potential for significant findings to impact students over the years in school. There are considerable questions generated by this study including the need to follow through with correlational analyses to determine intensities of association between the variables. A true longitudinal design that would allow the students at each grade level to be monitored through a greater part of their public school experience could provide more insights to students' motivation. There appears to be some areas in need of intervention especially as students undergo transition from the late elementary grades to the middle level. The trend in this school district for the low performing TAAS students to decline in all of the affective dimensions measured in this study is problematic. Similarly, the trend for all students (low, middle, and high TAAS performing students) to decrease in their perceptions on the scale of Achievement Motivation at the eighth grade demands a closer look at the system. It could be that the expectations of the middle school and high school hold less regard for the individual as the concentration shifts to become more subject oriented. Students could possibly be sensing this shift. This shift in emphasis from the student to content could be the proverbial "...straw that broke the camel's back" in terms of marginal students which results in them dropping out of school.

Finally, a closer look at the type of instruction going on in each classroom needs to be carried out. Student perceptions of the actual learning environment plus observations may provide a richer source of information. Hardwick (1994) found significant intensities of association and beta values between motivation and the degree to which opportunities for reflection and collaboration were

perceived in the science middle school classroom. A similar investigation may lend further insights as to potentially successful intervention strategies for this school district.

Summary

This study investigated the differences in student motivation across three grade levels depending upon their performance on the Texas Assessment of Academic Skills test. Differences were found in students' perceptions of motivation across and within grade levels. In addition, differences were found in the variance of students' perceptions of motivation as per their performance on the Texas Assessment of Academic Skills test.

The results of this study hint to the need for further research including a more in depth analysis of these data plus a longitudinal study. Several implications for practice can be drawn from this study, especially for the school district within which this study was performed. Major implications included examining current grouping practices, plus the more content centered learning environments students experience as they progress in school. In addition, there is a need to analyze current classroom learning environments to determine the types of instructional strategies being used. Finally, this study underscores the ability of learning environment assessments/instruments to reveal areas for educators to facilitate classroom improvement practices as per Fraser (1989).

Table 1

Analysis of variance results for effect of Fifth Grade TAAS scores on Motivation as per the MMI and ILEQ (Standard deviations in parenthesis)

Scale	Low TAAS n=28 M	Mid. TAAS n=28 M	High TAAS n=28 M	F	p
Soc. Slf.-Cncpt.	3.39	3.16	3.38	0.85	.43
	(1.16)	(1.34)	(1.16)		
Ac. Slf.-Cncpt.	4.10	3.84	4.43	8.23	.000**
	(1.13)	(1.14)	(.98)		
Achmt. Motvtn.	3.81	3.59	4.30	11.1	.000**
	(1.04)	(1.21)	(1.04)		
Stdnt. Asprtns.	3.94	4.16	4.60	10.9	.000**
	(1.40)	(1.29)	(.95)		

*= p<.05
**= p<.01

Table 2

Analysis of variance results for effect of Eighth Grade TAAS scores on Motivation as per the MMI and ILEQ (Standard deviations in parenthesis)

Scale	Low TAAS n=31 M	Mid. TAAS n=28 M	High TAAS n=28 M	F	p
Soc. Slf.-Cncpt.	2.81	3.08	3.86	19.8	.000**
	(1.34)	(1.06)	(.92)		
Ac. Slf.-Cncpt.	3.34	4.18	4.49	39.0	.000**
	(1.30)	(1.03)	(.73)		
Achmt. Motvtn.	3.15	3.46	3.82	8.5	.000**
	(1.19)	(1.26)	(1.14)		
Stdnt. Asprtns.	3.44	4.26	4.85	37.3	.000**
	(1.56)	(1.35)	(.62)		

*= p<.05
**= p<.01

Table 3

Analysis of variance results for effect of Eleventh Grade TAAS scores on Motivation as per the MMI and ILEQ (Standard deviations in parenthesis)

Scale	Low TAAS n=26 M	Mid. TAAS n=28 M	High TAAS n=32 M	F	p
Soc. Slf.-Cncpt.	3.33	3.62	3.68	1.69	.186
	(.90)	(1.03)	(.97)		
Ac. Slf.-Cncpt.	3.90	4.29	4.35	5.46	.005**
	(.97)	(.82)	(.80)		
Achmt. Motvtn.	3.59	3.68	3.61	0.18	.833
	(.99)	(.85)	(.99)		
Stdnt. Asprtns.	3.74	4.63	4.75	25.70	.000**
	(1.23)	(.72)	(.66)		

*= p<.05
**= p<.01

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